Success case factsheet

Dalia Ltd, Valea Crişului, Romania

The local cooperation in rural Romania to increase the biomass market uptake to produce heat in agricultural sector

Dalia Ltd., Valea Crişului, DN12,
Covasna County, Romania
200 t/y of energy willow and cleaning residuals from mountain pastures
Started 2007

THE STORY

Sfantu Gheorghe is the main town in Covasna county, located in Carpathian Mountain region of Romania one of the smallest county in Romania. At 2000s the area had abundance of sawmill dust which caused multiple users to develop biomass-based heating systems in greenhouses, bakeries, meat factories, etc. However, from 2015 onwards there was an increasing demand from board industries, and thus its availability decreased.

At Dalia Ltd. (the largest greenhouse in Covasna county) the turning point was a subsidy project from the pre-accession fund SAPARD. The project built in 2007 new greenhouses including a 4 MW biomass based heating system, initially fed with sawmill biomass.

After the shortage of sawmill dust, Dalia Ltd. promoted actions to trigger new biomass value chains in the region taking advantage of two opportunities. Firstly the availability of productive agricultural land , leading farmers to start new activity on willow energy crop plantations. Secondly, the woody biomass that can be obtained from green areas in Sfantu Gheorghe town or from environmental works to preserve the extensive pastures of local mountain ranges. These works are carried out by small local companies of environmental works, which now become Dalia Ltd. Suppliers.

The new value chains started the biomass supply to Dalia Ltd. after the biomass boiler were installed in Valea Crişului, 5 km from Sfantu Gheorghe 2008 and continues with a supply up to 2,000 t/yr on a commercial basis nowadays. The business is economic and able to supply woody biomass at 65 €/t (competitive with fossil fuels).

Through this model all actors have a gain. Dalia Ltd. saves in energy costs and contribute to growing rural growth (new company established in 2019), and farmers fin in biomass an additional income. Green Energy Innovative Biomass Cluster is engaged in the promotion of the replication of the project.

FACTS

Challenges

- Achieve good economics and effective collection of biomass
- Put into operation several medium size boilers able to heat more than 1 ha greenhouse
- Expand the capacity beyond the initial facilities
- Sustainable operation after the ending of EU-funding

Keys of success

- Good framework conditions & interest of all actors
- Competitive technological solution
- Dynamization to create new supply through a Sapard project
- Incorporating new competences/expertise on heating energy supply to Dalia Ltd.

Technology

- Engineering to install 6 Biosistem boilers with a total of 4,100 kW capacity at Dalia Ltd.
- Local biomass boiler producer (www.biosistem.ro) developing innovative boilers with efficiency >85% and dust emissions capture (patented with Politehnica University of Bucharest)
- Specific design of storage and feeding systems for feeding the biomass

Economics

- Initial investment in feeding system, storage and Biosistem boiler partly covered by Sapard project
- Non-subsidized reduction of Dalia's heating costs (20% reduction)
- Valorization of biomass materials from mountain pasture cleaning

Community

- All relevant actors of the local agricultural community represented and receiving positive impacts thanks to the initiative
- Relevant efforts of all participants in promoting the image of the initiative in local and national media
- Project awarded at EU and National level

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